FIG. 1

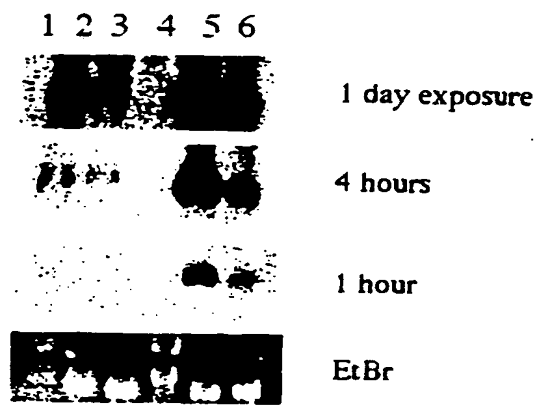


FIG. 2A

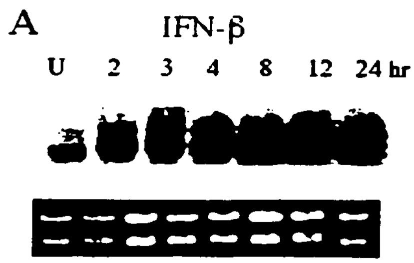
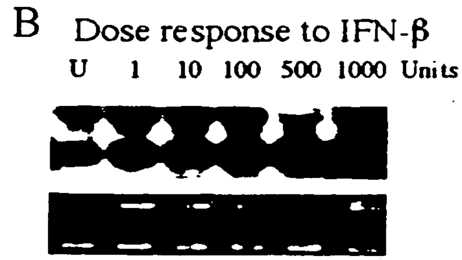


FIG. 2B



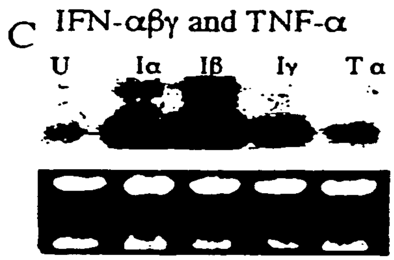


FIG. 2C

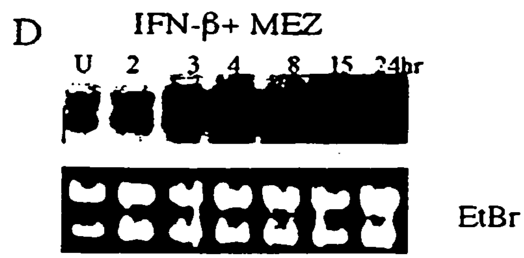


FIG. 2D

FIG. 3A

Human Multiple Tissue Northern Blot

1 2 3 4 5 6 7 8

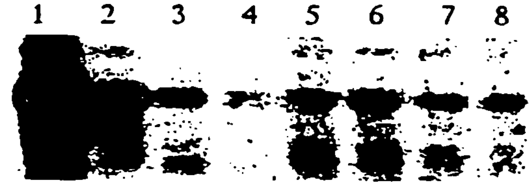


FIG. 3B

Mouse Development

8 10 12 13 14 16 days

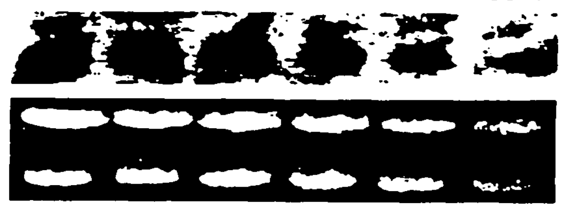


FIG. 4A

```
human      TTGAAGATTACAATGGTGACATGGACTTCAAAATAGCTGG    40
mouse      ...........AATGGTGACATGGATTTCAAAATAGCCGG    29
Consensus             aatggtgacatgga ttcaaaatagc gg

human      CACTAATAAAGGAATAACTGCATTACAGGCTGATATTAAA    80
mouse      TACAAATAAAGGAATAACTGCATTACAGGCTGATATTAAG    69
Consensus   ac aataaaggaataactgcattacaggctgatattaa

human      TTACCTGGAATACCAATAAAAATTGTGATGGAGGCTATTC   120
mouse      TTACCTGGAGTACCAATTAAAATTATAATGGAAGCCATCC   109
Consensus  ttacctgga taccaat aaaatt t atgga gc at c

human      AACAAGCTTCAGTGGCAAAAAAGGAGATATTACAGATCAT   160
mouse      AACAAGCGTCAGTGGCAAAGAAGGAGATACTGCAGATAAT   149
Consensus  aacaagc tcagtggcaaa aaggagata t cagat at

human      GAACAAAACTATTTCAAAACCTCGAGCATCTAGAAAAGAA   200
mouse      GAACAAAACGATTTCAAAACCTCGAGCATCAAGAAAAGAA   189
Consensus  gaacaaaac atttcaaaacctcgagcatc agaaaagaa

human      AATGGACCTGTTGTAGAAACTGTTCAGGTTCCATTATCAA   240
mouse      AATGGACCAGTTGTAGAAACAGTAAAGGTTCCATTATCAA   229
Consensus  aatggacc gttgtagaaac gt  aggttccattatcaa

human      AACGAGCAAAATTTGTTGGACCTGGTGGCTATAACTTAAA   280
mouse      AACGAGCAAAATTCGTTGGCCCTGGTGGATATCACTTAAA   269
Consensus  aacgagcaaaatt gttgg cctggtgg tat acttaaa

human      AAAACTTCAGGCTGAAACAGGTGTAACTATTAGTCAGGTG   320
mouse      AAAACTCCAGGCTGAGACAGGTGTAACAATTAGTCAGGTT   309
Consensus  aaaact caggctga acaggtgtaac attagtcaggt

human      GATGAAGAAACGTTTTCTGTATTTGCACCAACACCCAGTG   360
mouse      GATGAAGAAACCTTCTCCATATTTGCACCAACACCTACTG   349
Consensus  gatgaagaaac tt tc  tatttgcaccaacacc a tg

human      TTATGCATGACGCAAGAGACTTCATTACTGAAATCTGCAA   400
mouse      CAATGCATGAAGCAAGAGATTTCATTACAGAAATTTGCAG   389
Consensus    atgcatga gcaagaga ttcattac gaaat tgca

human      GGATGATCAGGAGCAGCAATTAGAATTTGGAGCAGTATAT   440
mouse      AGATGATCAAGAGCAACAATTAGAATTTGGAGCAGTTTAT   429
Consensus   gatgatca gagca caattagaatttggagcagt tat

human      ACCGCCACAATAACTGAAATCAGAGATACTGGTGTAATGG   480
mouse      ACCGCGACAATAACTGAAATCAGAGACACTGGAGTGATGG   469
Consensus  accgc acaataactgaaatcagaga actgg gt atgg
```

FIG. 4B

```
human       TAAAATTATATCCAAATATGACTGCGGTACTGCTTCATAA   520
mouse       TAAAACTGTATCCAAACATGACTGCAGTGCTGCTTCATAA   509
Consensus   taaaa t tatccaaa atgactgc gt ctgcttcataa

human       CACACAACTTGAT.AACGAAAGATTAAACATCCTACTGCC   559
mouse       TTCACAACTTGACCAACGAAAGATTAAACATCCCACTGCC   549
Consensus     cacaacttga  aacgaaagattaaacatcc actgcc

human       CTAGGATTAGAAGTTGGCCAAGAAATTCAGGTGAAATACT   599
mouse       CTAGGACTAGAGGTTGGCCAAGAAATTCAGGTCAAATACT   589
Consensus   ctagga taga gttggccaagaaattcaggt aaatact

human       TTGGACGTGACCCAGCCGATGGAAGAATGAGGCTTTCTCG   639
mouse       TTGGCCGTGATCCAGCTGATGGAAGAATGAGGCTTTCTCG   629
Consensus   ttgg cgtga ccagc gatggaagaatgaggctttctcg

human       AAAAGTGCTTC                                650
mouse       TAAAGTACTTC                                640
Consensus    aaagt cttc
```

FIG. 5

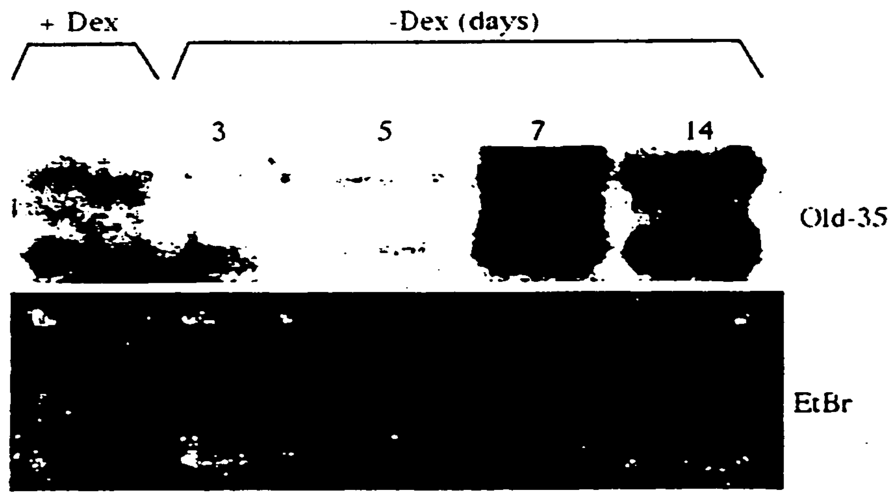


FIG. 6

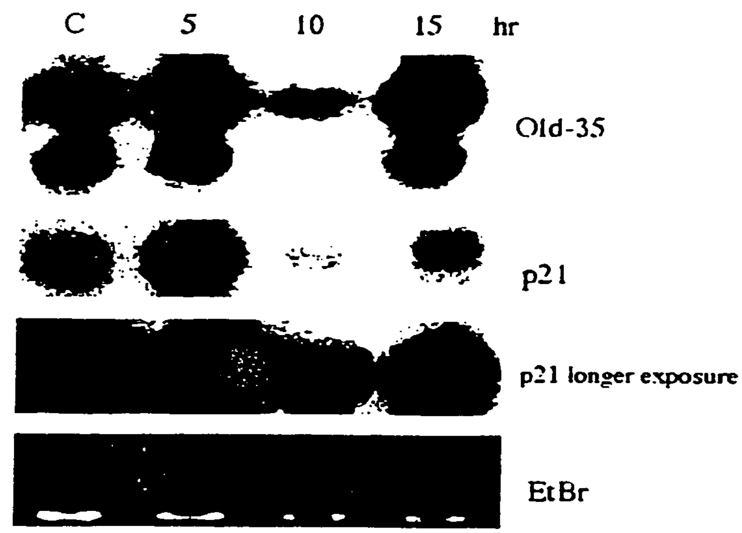


FIG. 7

Hu GM-CSF	UAAUAUUUAUAUAUUUAUAUUUUUAAAAUAUUUAUUUAUUUAUUUAA
Hu IFN-α	UAUUUAUUUAA
Hu Il 2	UAUUUAUUUAAAUAUUUAAAUUUUAUAUUUAAU
Hu TNF	AAUUAAUUUAUUAUUUAUUUAUUAUUUAUUUAUU
C-fos	GUUUUUAAUUUAUUUAUUAAGAUGGAUUCUCAGAUAUUUAUAUUUUUU AUUUUAUUUUUUUU
Old-35	AUUUACAUGUGCCAUUUUUUUAAUUCGAGUAACCCAUAUUUGUUUAAUU GUAUUUACAUUAUAAAUCAAGAAAUAUUUAUUAUUAAAAGUAAGUC AUUUAUACAUCUUAGA

FIG. 8A

Response of Old-35
To IFN-β Treatment
In the Presence of Cyclohexamide

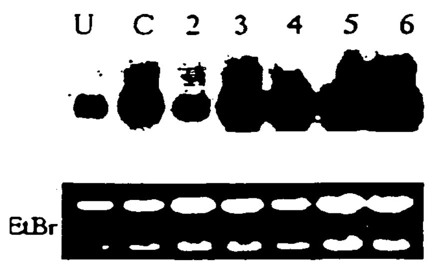


FIG. 8B

Half-life of Old-35 in IFN-β+MEZ
Treated HO-1

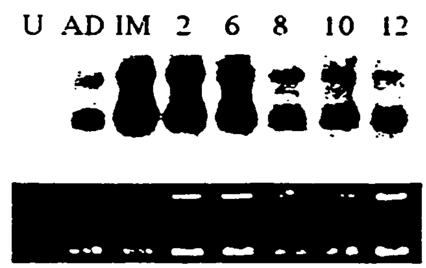


FIG. 9A

GATGGTCCTT TCCTTCTGCC ACGGCGGGAT CGGGCACTCA CCCAGTTGCA
AGTGCGAGCA CTATGGAGTA GCGCAGGGTC TCGAGCTGTG GCCGTGGACT
TAGGCAACAG GAAATTAGAA ATATCTTCTG GAAAGCTGGC CAGATTTGCA
GATGGCTCTG CTGTAGTACA GTCAGGTGAC ACTGCAGTAA TGGTCACAGC
GGTCAGTAAA ACAAAACCTT CCCCTTCCCA GTTTATGCCT TTGGTGGTTG
ACTACAGACA AAAAGCTGCT GCAGCAGGTA GAATTCCCAC AAACTATCTG
AGAAGAGAGG TTGGTACTTC TGATAAAGAA ATTCTAACAA GTCGAATAAT
AGATCGTTCA ATTAGACCGC TCTTTCCAGC TGGCTACTTC TATGATACAC
AGGTTCTGTG TAATCTGTTA GCAGTAGATG GTGTAAATGA GCCTGATGTC
CTAGCAATTA ATGGCGCTTC CGTAGCCCTC TCATTATCAG ATATTCCTTG
GAATGGACCT GTTGGGGCAG TACGAATAGG AATAATTGAT GGAGAATATG
TTGTTAACCC AACAAGAAAA GAAATGTCTT CTAGTACTTT AAATTTAGTG
GTTGCTGGAG CACCTAAAAG TCAGATTGTC ATGTTGGAAG CCTCTGCAGA
GAACATTTTA CAGCAGGACT TTTGCCATGC TATCAAAGTG GGAGTGAAAT
ATACCCAACA AATAATTCAG GGCATTCAGC AGTTGGTAAA AGAAACTGGT
GTTACCAAGA GGACACCTCA GAAGTTATTT ACCCCTTCGC CAGAGATTGT
GAAATATACT CATAAACTTG CTATGGAGAG ACTCTATGCA GTTTTTACAG
ATTACGAGCA TGACAAAGTT TCCAGAGATG AAGCTGTTAA CAAAATAAGA
TTAGATACGG AGGAACAACT AAAAGAAAAA TTTCCAGAAG CCGATCCATA
TGAAATAATA GAATCCTTCA ATGTTGTTGC AAAGGAAGTT TTTAGAAGTA
TTGTTTTGAA TGAATACAAA AGGTGCGATG GTCGGGATTT GACTTCACTT
AGGAATGTAA GTTGTGAGGT AGATATGTTT AAAACCCTTC ATGGATCAGC
ATTATTTCAA AGAGGACAAA CACAGGTGCT TTGTACCGTT ACATTTGATT
CATTAGAATC TGGTATTAAG TCAGATCAAG TTATAACAGC TATAAATGGG
ATAAAAGATA AAAATTTCAT GCTGCACTAC GAGTTTCCTC CTTATGCAAC
TAATGAAATT GGCAAAGTCA CTGGTTTAAA TAGAAGAGAA CTTGGGCATG
GTGCTCTTGC TGAGAAAGCT TTGTATCCTG TTATTCCCAG AGATTTTCCT
TTCACCATAA GAGTTACATC TGAAGTCCTA GAGTCAAATG GGTCATCTTC
TATGGCATCT GCATGTGGCG GAAGTTTAGC ATTAATGGAT TCAGGGGTTC
CAATTTCATC TGCTGTTGCA GGCGTAGCAA TAGGATTGGT CACCAAAACC
GATCCTGAGA AGGGTGAAAT AGAAGATTAT CGTTTGCTGA CAGATATTTT
GGGAATTGAA GATTACAATG GTGACATGGA CTTCAAAATA GCTGGCACTA
ATAAAGGAAT AACTGCATTA CAGGCTGATA TTAAATTACC TGGAATACCA
ATAAAAATTG TGATGGAGGC TATTCAACAA GCTTCAGTGG CAAAAAAGGA
GATATTACAG ATCATGAACA AAACTATTTC AAAACCTCGA GCATCTAGAA
AAGAAAATGG ACCTGTTGTA GAAACTGTTC AGGTTCCATT ATCAAAACGA
GCAAAATTTG TTGGACCTGG TGGCTATAAC TTAAAAAAAC TTCAGGCTGA
AACAGGTGTA ACTATTAGTC AGGTGGATGA AGAAACGTTT TCTGTATTTG
CACCAACACC CAGTGTTATG CATGAGGCAA GAGACTTCAT TACTGAAATC
TGCAAGGATG ATCAGGAGCA GCAATTAGAA TTTGGAGCAG TATATACCGC
CACAATAACT GAAATCAGAG ATACTGGTGT AATGGTAAAA TTATATCCAA
ATATGACTGC GGTACTGCTT CATAACACAC AACTTGATAA CGAAAGATTA
AACATCCTAC TGCCCTAGGA TTAGAAGTTG GCCAAGAAAT TCAGGTGAAA
TACTTTGGAC GTGACCCAGC CGATGGAAGA ATGAGGCTTT CTCGAAAAGT
GCTTCAGTCG CCAGCTACAA CCGTGGTCAG AACTTTGAAT GACAGAAGTA
GTATTGTAAT GGGAGAACCT ATTTCACAGT CATCATCTAA TTCTCAGTGA
TTTTTTTTTT TTAAAGAGAA TTCTAGAATT CTATTTTGTC TAGGGTGATG
TGCTGTAGAG CAACATTTTA GTAGATCTTC CATTGTGTAG ATTTCTATAT
AATATAAATA CATTTTAATT ATTTGTACTA AAATGCTCAT TTACATGTGC
CATTTTTTTA ATTCGAGTAA CCCATATTTG TTTAATTGTA TTTACATTAT
AAATCAAGAA ATATTTATTA TTAAAGTAA GTCATTTATA CATCTTAGA

FIG. 9B

DGPFLLPRRD RALTQLQVRA LWSSAGSRAV AVDLGNRKLE ISSGKLARFA
DGSAVVQSGD TAVMVTAVSK TKPSPSQFMP LVVDYRQKAA AAGRIPTNYL
RREVGTSDKE ILTSRIIDRS IRPLFPAGYF YDTQVLCNLL AVDGVNEPDV
LAINGASVAL SLSDIPWNGP VGAVRIGIID GEYVVNPTRK EMSSSTLNLV
VAGAPKSQIV MLEASAENIL QQDFCHAIKV GVKYTQQIIQ GIQQLVKETG
VTKRTPQKLF TPSPEIVKYT HKLAMERLYA VFTDYEHDKV SRDEAVNKIR
LDTEEQLKEK FPEADPYEII ESFNVVAKEV FRSIVLNEYK RCDGRDLTSL
RNVSCEVDMF KTLHGSALFQ RGQTQVLCTV TFDSLESGIK SDQVITAING
IKDKNFMLHY EFPPYATNEI GKVTGLNRRE LGHGALAEKA LYPVIPRDFP
FTIRVTSEVL ESNGSSSMAS ACGGSLALMD SGVPISSAVA GVAIGLVTKT
DPEKGEIEDY RLLTDILGIE DYNGDMDFKI AGTNKGITAL QADIKLPGIP
IKIVMEAIQQ ASVAKKEILQ IMNKTISKPR ASRKENGPVV ETVQVPLSKR
AKFVGPGGYN LKKLQAETGV TISQVDEETF SVFAPTPSVM HEARDFITEI
CKDDQEQQLE FGAVYTATIT EIRDTGVMVK LYPNMTAVLL HNTQLDNERL
NILLP·

FIG. 10A

```
B subtilis   ......................MGQEKHVFTIDWAGRTLT   18
human        DGPFLLPRRDRALTQLQVRALWSSAGSRAVAVDLGNRKLE   40
Consensus                                    d   r l

B subtilis   VETGQLAKQANGAVMIRYGDTAVLSTATASKEPKPLDFFP   58
human        ISSGKLARFADGSAVVQSGDTAVMVTAVSKTKPSPSQFMP   80
Consensus       g la  a g      gdtav  ta     p p  f p

B subtilis   LTVNYEERLYAVGKIPGGFIKREGRPSEKAVLASRLIDRP   98
human        LVVDYRQKAAAAGRIPTNYLRREVGTSDKEILTSRIIDRS   120
Consensus    l v y     a g ip     re   s k  l sr idr

B subtilis   IRPLFADGFRNEVQVISIVMSVDQNCSSEMAAMFGSSLAL   138
human        IRPLFPAGYFYDTQVLCNLLAVDGVNEPDVLAINGASVAL   160
Consensus    irplf  g     qv      vd        a  g s al

B subtilis   SVSDIPFEGPIAGVTVGRIDDQFIINPTVDQLEKSDINLV   178
human        SLSDIPWNGPVGAVRIGIIDGEYVVNPTRKEMSSSTINLV   200
Consensus    s sdip  gp   v  g id     npt      s  nlv

B subtilis   VAGT.KDAINMVEAGADEVPEEIMLEAIMFGHEEIKRLIA   217
human        VAGAPKSQIVMLEASAENILQQDFCHAIKVGVKYTQQIIQ   240
Consensus    vag  k  i m ea a          ai  g       i

B subtilis   FQEEIVAAVGKEK.SEIKLFEIDEELNEKVKALAEEDLLK   256
human        GIQQLVKETGVTKRTPQKLFTPSPEIVKYTHKLAMERLYA   280
Consensus         v   g  k    klf    e       la e l

B subtilis   AIQVHEKHAREDAINEVKNAVVAKFEDEEHDEDTIKQVKQ   296
human        VFTDYEHDKVSRDEAVNKIRLDTEEQLKEKFPEADPYEII   320
Consensus         e           k          e

B subtilis   ILSKLVKNEVRRLITE.EKVRPDGRGVDQIRPLSSEVGLL   335
human        ESFNVVAKEVFRSIVLNEYKRCDGRDLTSIRNVSCEVDMF   360
Consensus         v  ev r i   e  r dgr     r  s ev

B subtilis   PRTHGSGLFTRGQTQALSVCTLGALGDVQILDGLGVEES.   374
human        KTLHGSALFQRGQTQVLCTVTFDSLESGIKSDQVITAING   400
Consensus       hgs lf rgqtq l   t   l      d

B subtilis   ...KRFMHHYNFPQFSVGETGPMRGPGRREIGHGALGERA   411
human        IKDKNFMLHYEFPPYATNEIGKVTGLNRRELGHGALAEKA   440
Consensus       k fm hy fp     e g   g  rre ghgal e a

B subtilis   LEPVIPSEKDFPYTVRLVSEVLESNGSTSQASICASTLAM   451
human        LYPVIPR..DFPFTIRVTSEVLESNGSSSMASACGGSLAL   478
Consensus    l pvip   dfp t r  sevlesngs s as c   la
```

FIG. 10B

```
B subtilis   MDAGVPIKAPVAGIAMGLVKSG.......EHYTVLTDIQG   484
human        MDSGVPISSAVAGVAIGLVTKTDPEKGEIEDYRLLTDILG   518
Consensus    md gvpi   vag a glv          e y  ltdi g

B subtilis   MEDALGDMDFKVAGTEKGVTALQMDIKIEGLSREILEEAL   524
human        IEDYNGDMDFKIAGTNKGITALQADIKLPGIPIKIVMEAI   558
Consensus     ed  gdmdfk agt kg talq dik  g    i  ea

B subtilis   QQAKKGRMEILNSMLATLSESRKELSRYAPKILTMTINPD   564
human        QQASVAKKEILQINNKTISKPRASRKENGPVVETVQVPLS   598
Consensus    qqa     eil  m  t s  r       p   t

B subtilis   KIRDVIGPSGKQINKIIEETGVKIDIEQDGTIFISSTDES   604
human        KRAKFVGPGGYNLKKLQAETGVTISQVDEETFSVFAPTPS   638
Consensus    k     gp g    k   etgv i      t        s

B subtilis   GNQKAKKIIEDLVREVEVGQLYLGKVKRIEKFGAFVEIFS   644
human        VMHEARDFITEICKDDQEQQLEFGAVYTATITEIRDTGVM   678
Consensus        a   i          ql  g v

B subtilis   GKDGLVHISELALERVGKVEDVVKIGDEILVKVTEIDKQG   684
human        VKLYPNMTAVLLENTQLDNERLNILLP.............   705
Consensus     k        l        e

B subtilis   RVNLSRKAVLREEKEKEEQQS                      705
human        .....................                      705
Consensus
```

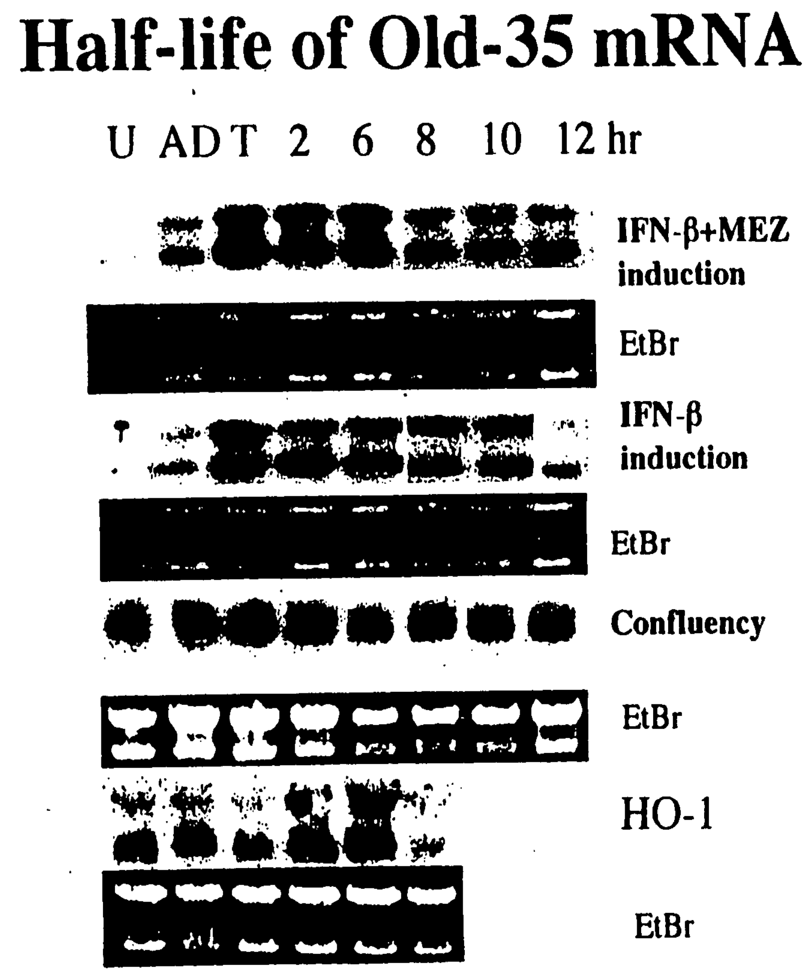

Half-life of Old-35 mRNA
U ADT 2 6 8 10 12 hr
IFN-β+MEZ induction
EtBr
IFN-β induction
EtBr
Confluency
EtBr
HO-1
EtBr

FIGURE 11

FIGURE 12

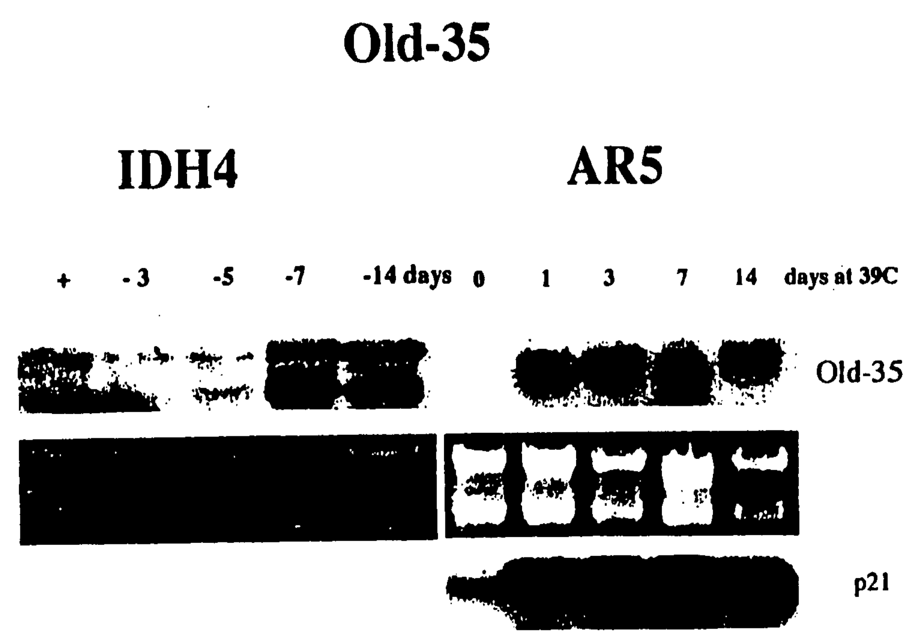


FIGURE 13

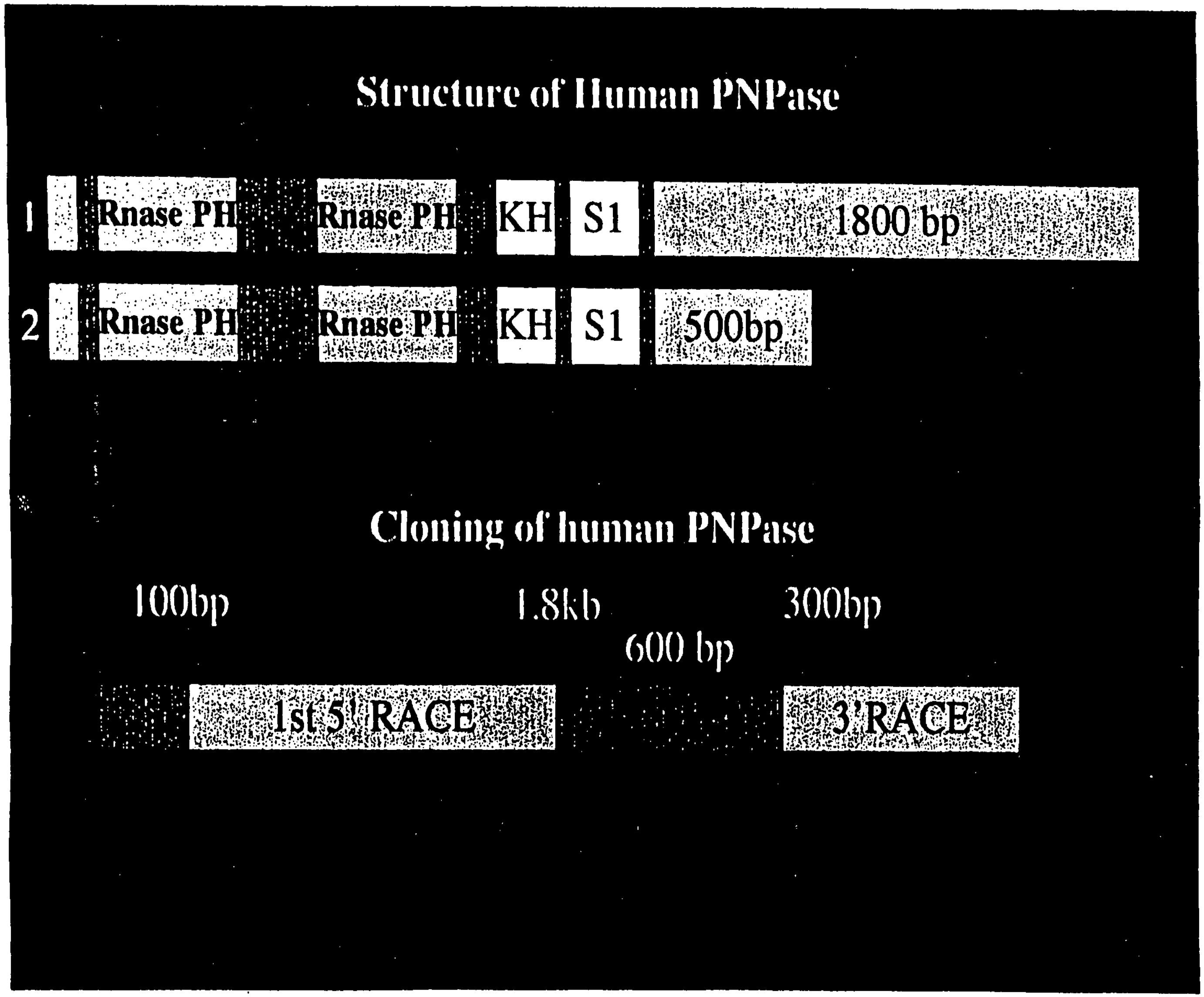

Structure of Human PNPase
1
Rnase PH
Rnase PH
KH
S1
1800 bp
2
Rnase PH
Rnase PH
KH
S1
500bp
Cloning of human PNPase
100bp
1.8kb
300bp
600 bp
1st 5' RACE
3'RACE

FIGURE 14

The effect of subtypes of IFN- α on Old-35 expression

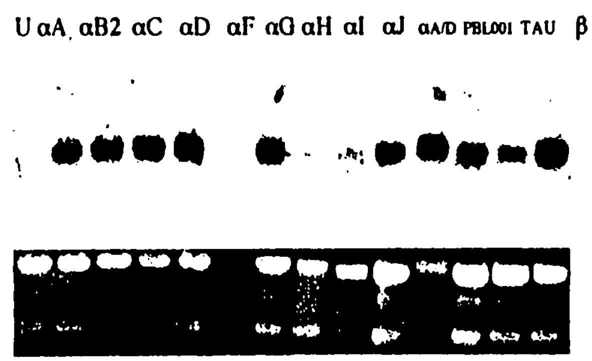
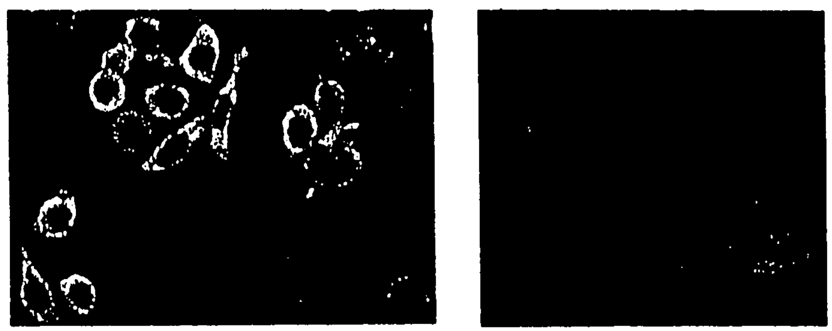


FIGURE 15

Old-35 is expressed in the spinal column
and the genital area

FIGURE 16

Localization of Old-35 In HeLa cells



GFP-hPNPase
40X

GFP
100X